



# ***Drainage and Flood Control Priority Bond Projects***

Stormwater Management  
September 8, 2011



# ***Department Mission***

- Protect the public against flood hazards and polluted stormwater runoff by:
  - Planning and implementing capital improvement projects to mitigate existing flood hazards
  - Reviewing development proposals for compliance with the city's floodplain management and stormwater ordinance

# ***Department Mission***

- Protect the public against flood hazards and polluted stormwater runoff by:
  - Complying with the requirements of the city's stormwater quality permit from the Arizona Department of Environmental Quality
  - Managing the city's floodplains in accordance with National Flood Insurance Program regulations

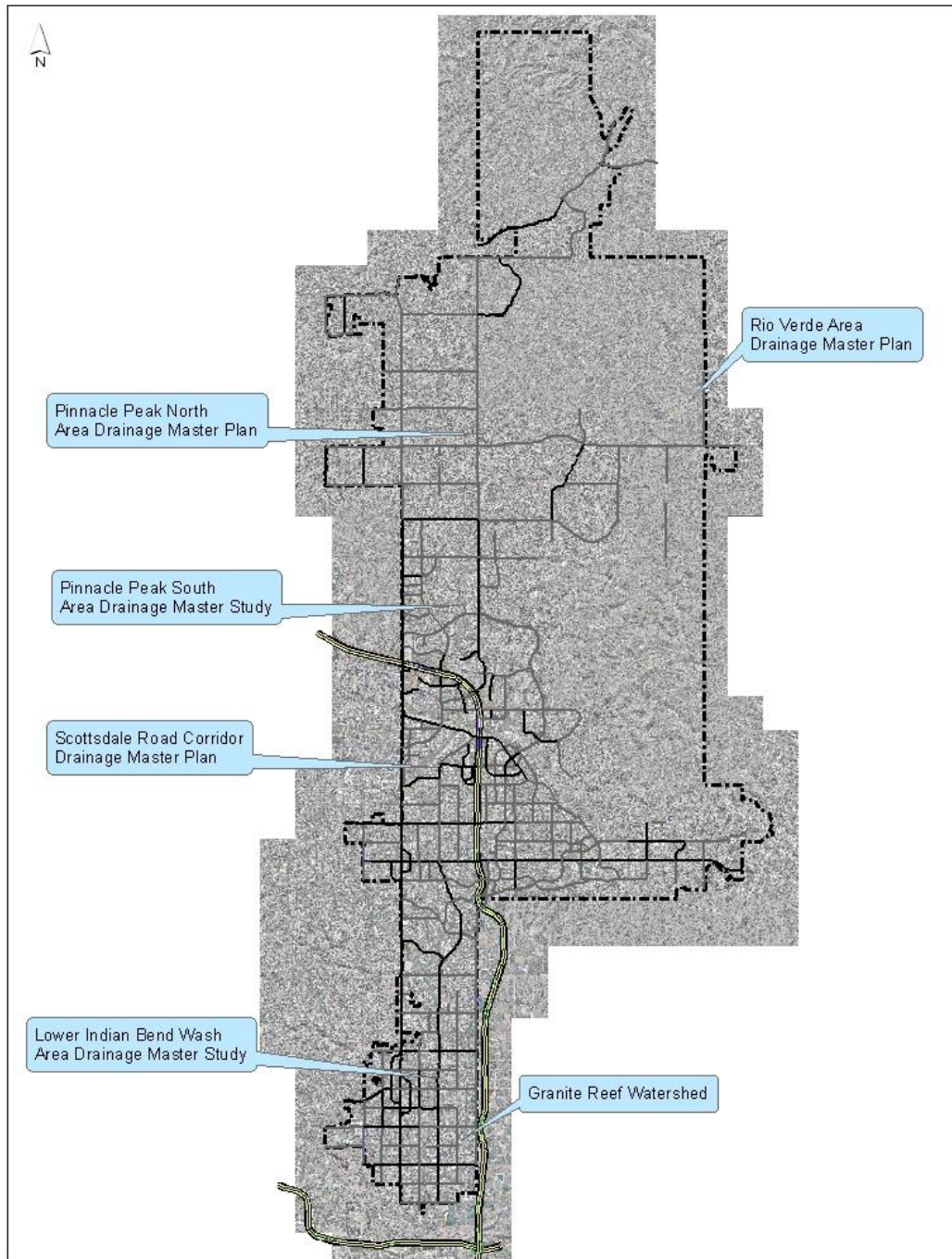
# ***Department Planning Philosophy***

Consistent with the General Plan, prioritize projects that:

- Mitigate flood hazards (esp. structural flooding)
- Have a high benefit/cost ratio
- Promote revitalization and economic development
- Leverage funds from external sources
  - Flood Control District of Maricopa County (FCDMC)
    - Typically funds 50-70% of cost of qualifying projects
    - City must provide 30-50% of project cost in order to qualify for FCDMC funding
    - Scottsdale property owners contribute \$11M annually to FCDMC via property taxes

# ***Current Master Plan/Guidelines***

- A funding source for a Stormwater Master Plan to be adopted by City Council has yet to be identified
  - Not bond eligible
- Area Drainage Master Studies/Plans with FCDMC
  - Paradise Valley, Scottsdale, Phoenix (Completed)
  - Granite Reef Watershed (Completed)
  - Rio Verde (Completed)
  - Pinnacle Peak South (Underway)
  - Lower Indian Bend Wash (Late 2011)
  - Pinnacle Peak North (Future)





# ***Current 5-year CIP Funding Sources***

## **Internal**

- General fund: \$17M
- General obligation bonds (2000): \$8M
- In-lieu fees: \$1.8M
- **Subtotal = \$27M**

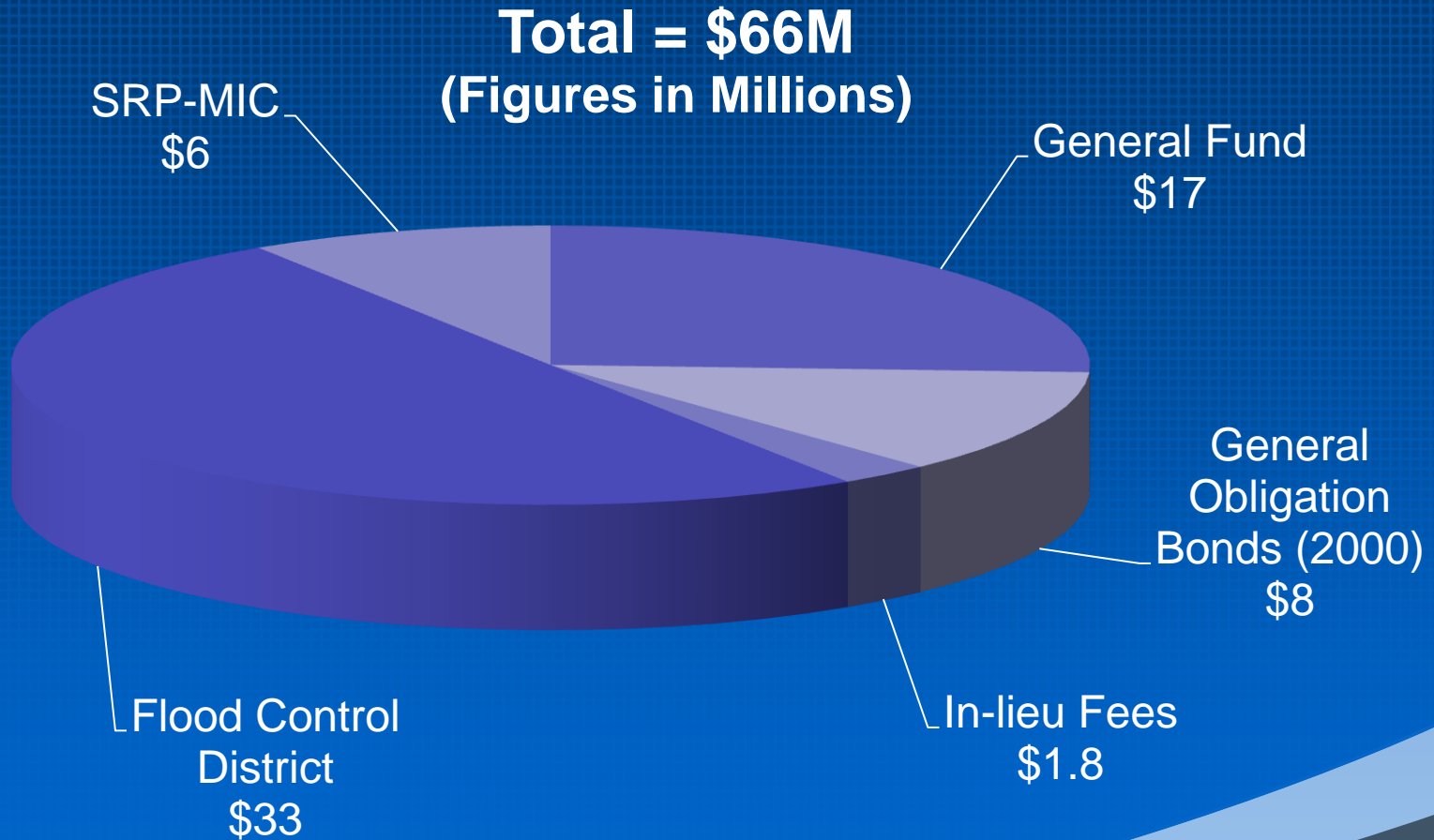
## **External**

- Flood Control District of Maricopa County: \$33M
- Salt River Pima-Maricopa Indian Community: \$6M
- **Subtotal = \$39M**

**Total = \$66M**

Stormwater Management has no dedicated funding source for drainage and flood control capital improvement projects

# ***Current 5-year CIP Funding Sources***



**Each \$1.00 in general obligation bonds provides \$2.44 of drainage and flood control capital improvement projects**



# ***Needs Assessment***

- Perception issues
  - “We live in a desert; why invest in drainage infrastructure?”
  - “I’ve lived here 10 years, and I’ve never seen a drop of water in that wash.”
- 19,739 residential, commercial, and industrial properties in existing or pending FEMA-adopted Special Flood Hazard Areas (SFHAs) city-wide
- Thousands of additional structures at risk of flooding in a 100-year storm event in local (i.e., non-SFHA) floodplains city-wide
- City has drainage infrastructure needs totaling in the hundreds of millions of dollars



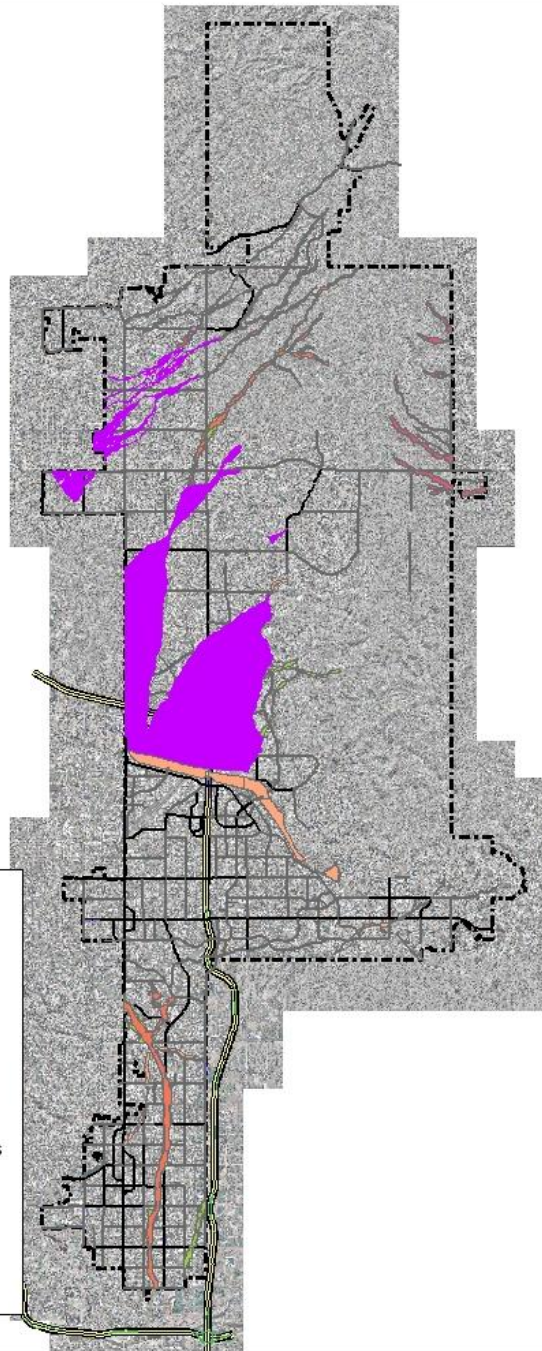
### **Legend**

#### **FEMA**

-  AO
-  AH
-  AE-FW
-  AE
-  A

#### **Flood Insurance Studies**

-  A
-  AE
-  AE-FW
-  FW



# ***Programmatic Needs***

## **Neighborhood Stormwater Management Improvements**

- Needs = \$500k per year
- Internal Sources
  - Bond 2000: originally \$800k, but funds fully depleted
  - General fund: \$14k/yr avg. new appropriations last two years
  - In-lieu fees: \$51k/yr avg. last three years
- External Sources
  - FCDMC Small Projects Assistance Program
  - Competitive grant program: \$2M annually County-wide
  - Provides 75% of construction cost up to \$250K

# ***Programmatic Needs***

## Wet Crossing Improvements – North

- 67 wet crossings of major roadways in North Scottsdale
  - 21 are high priority
- Mobility limited during and after major storms
  - Impacts emergency services vehicle response times
- Storm response:
  - Police vehicles, barricades and signage, sediment and debris clean-up
- \$1.2M per year
  - This amount adequate for two projects per year

# ***Identified Near-Term Projects***

Project and funding shortfall:

- Granite Reef Watershed: \$3.5M
- McCormick Stillman/Lincoln Drive Drainage Improvements: \$6.7M
- Loop 101 Detention Basin: \$2.2M
- Loop 101 Outlet Storm Drain: \$1.6M
- Powerline Interceptor Channel: \$3.4M
- East Union Hills Interceptor Channel: \$1.4M

# ***Identified Mid-Term Projects***

Project and funding shortfall:

- McCormick Pkwy/Camelback Wash Culverts: \$2.3M
- McDowell Road Storm Drain: \$1.5M
  - Cross Cut Canal to Scottsdale Rd
- Camelback Road Storm Drain: \$4.0M
  - Scottsdale Rd to Indian Bend Wash
- McDonald Drive Storm Drain: \$2.1M
  - 86<sup>th</sup> St to 82<sup>nd</sup> St
- 86<sup>th</sup> Street Storm Drain: \$4.6M
  - Arizona Canal to Chaparral Road



# ***Identified Long-Term Projects***

Project and funding shortfall:

- Happy Valley Road Drainage Channel: \$625k
  - Glenn Moor Road to Reata Pass Wash
- Sierra Pinta Drive/Pima Road Drainage Improvements: \$1.5M
- McCormick Parkway at Northern Avenue Drainage Improvements: \$1.6M
- Wells Fargo Ave. Storm Drain Replacement: \$550k

# ***Neighborhood Stormwater Management Improvements: Details***

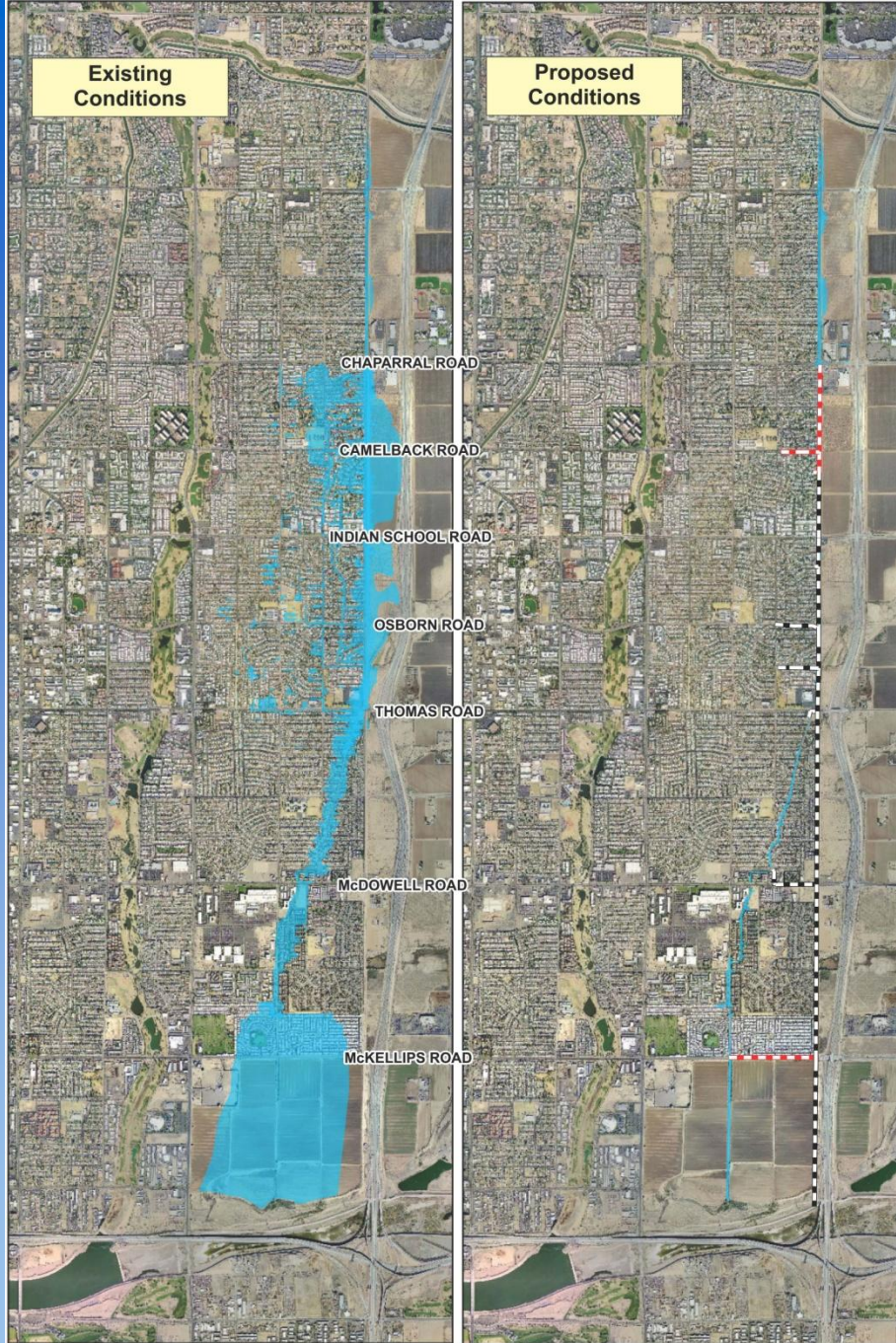
## **Example Projects and Cost Estimates:**

- Cheery Lynn Rd Storm Drain (67<sup>th</sup> PI to 69<sup>th</sup> PI): \$200K
- Osborn Rd Area Drainage Improvements (66<sup>th</sup> St to 70<sup>th</sup> St)
- Scottsdale Haciendas Drainage Improvements: \$35K
- Paradise Dr Drainage Improvements (W of 101<sup>st</sup> St): \$40K
- 73<sup>rd</sup> PI and Corrine Dr Drainage Improvements: \$120K
- Sandflower Drainage Improvements: \$350K
- 64<sup>th</sup> St Drainage Imp. (Jomax Rd to Redbird Rd): \$40K
- 2<sup>nd</sup> St Storm Drain (Pueblo Way to 69<sup>th</sup> St): \$100K
- 66<sup>th</sup> St and Palm Ln Drainage Improvements

# ***Neighborhood Stormwater Management Improvements: Community Benefit***

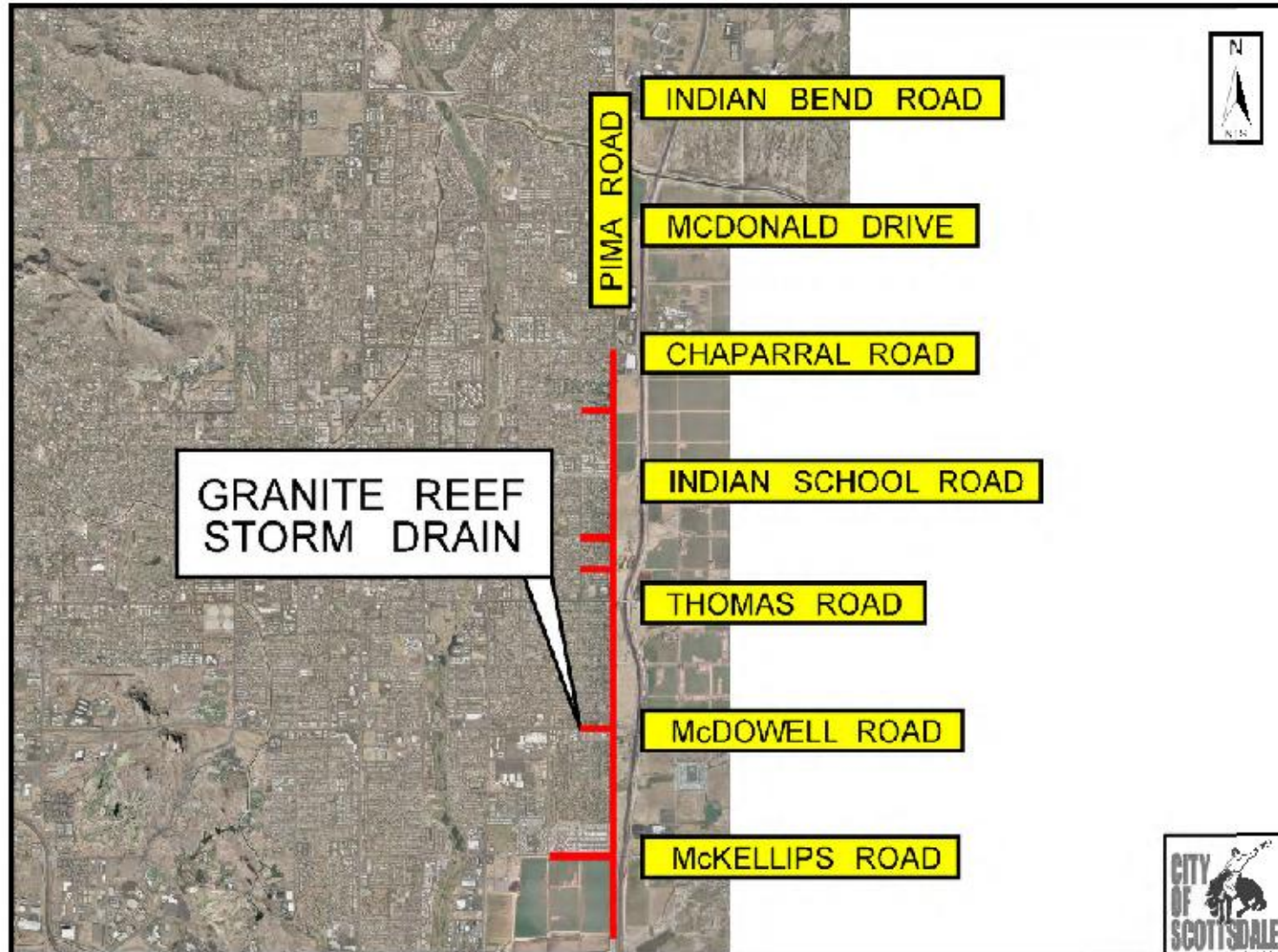
- In a typical year, small floods occur in 2-3 Scottsdale neighborhoods
- Funding of \$500k per year allows for typically three small flood hazard mitigation projects per year
- Allows the city to respond quickly, typically within 12-18 months, to flooding events in neighborhoods
  - Major CIP project planning and implementation typically takes 3-5 years







# ***Granite Reef Watershed (Pima Road Storm Drain)***



# ***Granite Reef Watershed: Details***

- Construct approximately 5 miles of large diameter storm drain
  - Along Pima Rd from Chaparral Rd to Salt River
- Partnership with:
  - Flood Control District of Maricopa County (\$23.7M)
  - Salt River Pima-Maricopa Indian Community (\$14.2M – inc. \$8M R/W)
- Current City funding = \$7.7M
- \$3.5M bond funding sought



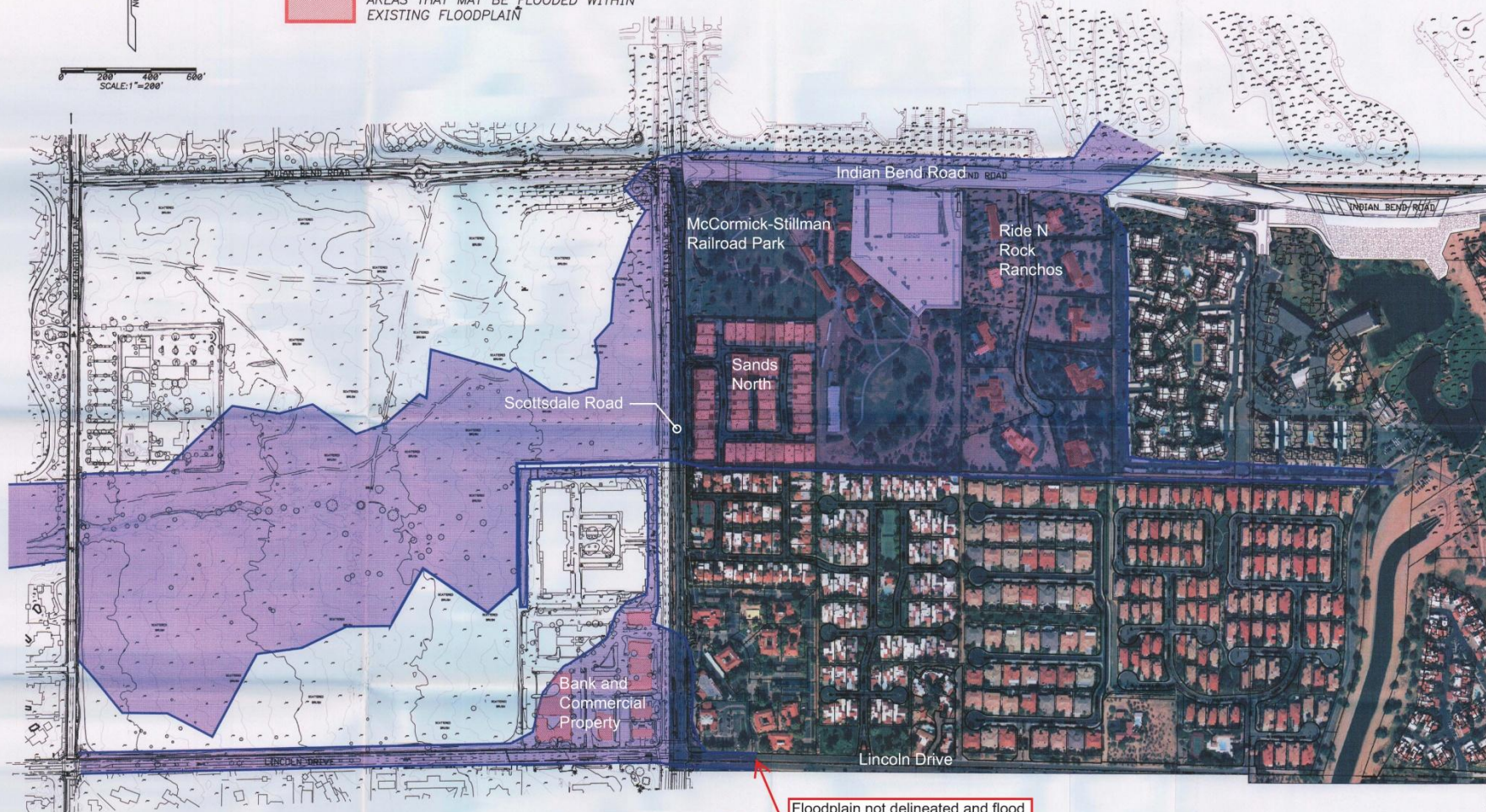
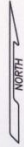
# ***Granite Reef Watershed: Community Benefit***

- Remove 100-year flood hazard affecting about 1,200 developed properties within Scottsdale alone, as well as additional developed and undeveloped properties within SRP-MIC
- 100-year storm event would cause substantial damage to private property and City facilities
- Promote public safety and mobility
- Eliminate the requirement for costly flood insurance (estimated at \$600k annually within Scottsdale alone)
- Promotes development potential

# 100-Year Floodplain Delineation Master Drainage Report for 7000 E. Lincoln Drive

- EXISTING FLOODPLAIN
- AREAS THAT MAY BE FLOODED WITHIN EXISTING FLOODPLAIN

200' 400' 600'  
SCALE: 1"=200'



Floodplain not delineated and flood hazard not identified

EXISTING FLOODPLAIN

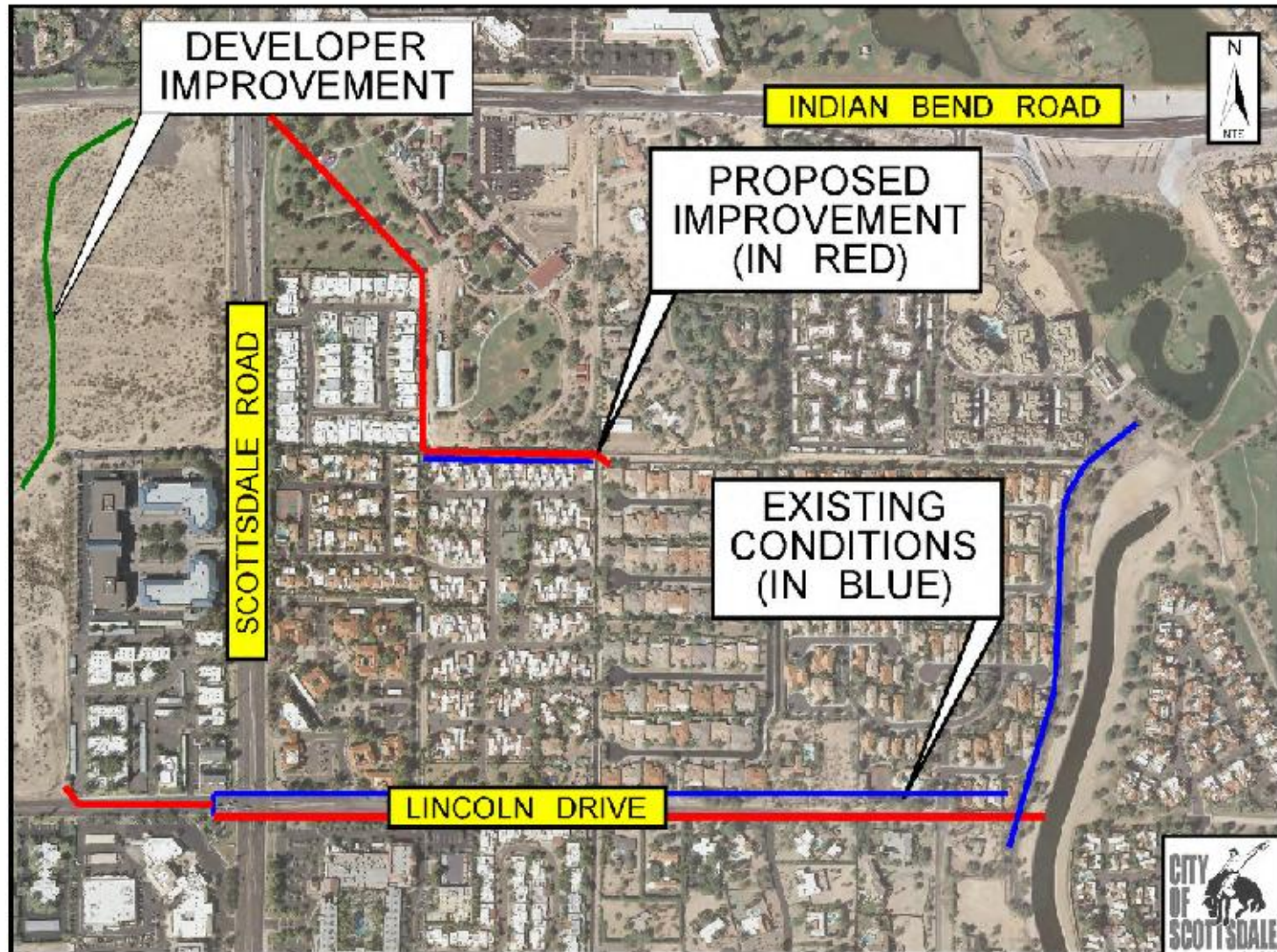


JOB NO. 1540.05  
DATE: 03/04/2009  
SCALE: 1"=200'  
DRAWN: J.S.  
DESIGN: J.M.  
CHECKED: J.M.  
SHEET NO.

PLATE 7



# ***McCormick Stillman/Lincoln Drive Drainage Improvements***



# ***McCormick Stillman/Lincoln Drive Drainage Improvements: Details***

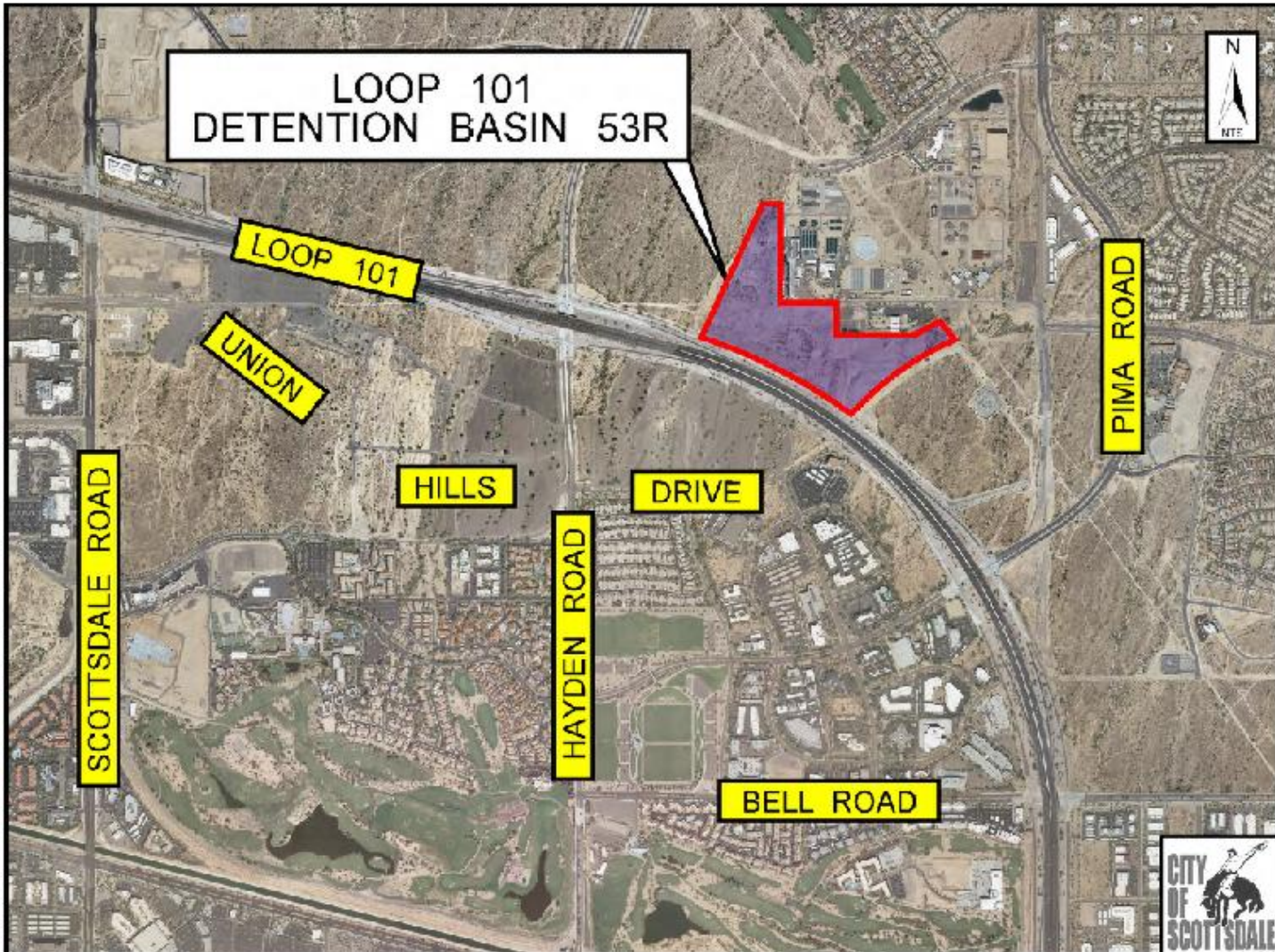
- Construct storm drain improvements in Lincoln Drive from the southeast corner of the proposed Ritz-Carlton project in Paradise Valley to the interceptor channel upstream of the Arizona Canal (\$5M)
- Construct a new channel from the intersection of Scottsdale Road and Indian Bend Road to the southeast corner of McCormick-Stillman Railroad Park (\$1.7M)
- Total estimated cost = \$6.7M
- \$4M of Flood Control District funding being sought

# ***McCormick Stillman/Lincoln Drive Drainage Improvements: Community Benefit***

- Project provides 100-year flood protection for:
  - McCormick-Stillman Railroad Park
  - Sands North
  - Commercial development at the northwest corner of Scottsdale Road and Lincoln Drive
  - Scottsdale Rd, Lincoln Dr, & Indian Bend Rd
- Project allows development of property (currently known as the Palmeraie project) at southwest corner of Indian Bend Road and Scottsdale Road without stormwater storage basins



# ***Loop 101 Detention Basin (Basin 53R Improvements)***





# ***Loop 101 Detention Basin: Details***

- Construct improvements to an existing large borrow pit to make it suitable for use as a regional detention basin
- This project is consistent with the Basin 53R Drainage Concept Evaluation Study approved by the City of Scottsdale and the Arizona State Land Department
- Total estimated cost = \$7.3M
  - \$4.1M general fund
  - \$1.0M Flood Control District funding already committed; more funding will be sought
  - \$2.2M bond funding sought

# ***Loop 101 Detention Basin: Community Benefit***

- Project provides 100-year flood protection in the vicinity of the project and allows, in conjunction with other city- and developer-funded projects, a stormwater storage waiver for a large area of Arizona State Land Trust property known as Crossroads East
- This promotes the development potential of Crossroads East
  - Maximizes developable real estate at minimum drainage infrastructure cost
- Benefits accrue to downstream properties as well as Crossroads East

# Loop 101 Outlet Storm Drain





# ***Loop 101 Outlet Storm Drain: Details***

- Construct a conveyance facility to provide 100-year flood protection in the vicinity of the project and provide an outfall from the Loop 101 Detention Basin
- This project is consistent with the Basin 53R Drainage Concept Evaluation Study approved by the City of Scottsdale and the Arizona State Land Department
- Total estimated cost = \$5M
  - \$3.4M general fund
  - \$1.6M bond funding sought
  - Flood Control District funding will be sought

# ***Loop 101 Outlet Storm Drain: Community Benefit***

- Project provides 100-year flood protection in the vicinity of the project and allows, in conjunction with other city- and developer-funded projects, a stormwater storage waiver for Crossroads East
- This promotes the development potential of Crossroads East
  - Maximizes developable real estate at minimum drainage infrastructure cost
- Benefits accrue to downstream properties as well as Crossroads East

# ***Other Related Crossroads East Drainage & Flood Control CIP Projects***

- Pima Road Drainage Channel (fully funded)
- E. Union Hills Interceptor Channel
  - \$1.9M General fund
  - \$1.4M Shortfall
- Powerline Interceptor Channel
  - \$2.2M General fund
  - \$3.4M Shortfall



# ***Project Priorities (Top 5)***

- Neighborhood Stormwater Management Improvements
  - \$500k per year for three years = \$1.5M
- Granite Reef Watershed: \$3.5M
- McCormick Stillman/Lincoln Drive Drainage Improvements: \$6.7M
- Loop 101 Detention Basin: \$2.2M
- Loop 101 Outlet Storm Drain: \$1.6M

**Total = \$15.5M Bond Funding Sought**